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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,689	11/08/2002	Jiang Hsieh	128402	2327
23465	7590	01/03/2008		
JOHN S. BEULICK C/O ARMSTRONG TEASDALE, LLP ONE METROPOLITAN SQUARE SUITE 2600 ST LOUIS, MO 63102-2740			EXAMINER ROY, BAISAKHI	
			ART UNIT	PAPER NUMBER
			3737	
			NOTIFICATION DATE	DELIVERY MODE
			01/03/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary

Application No.

10/065,689

Applicant(s)

HSIEH ET AL.

Examiner

Baisakhi Roy

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/19/07 have been fully considered but they are not persuasive. With respect to Wilson, the method as disclosed enables representing individual elements of different density within a reference material using multiple energy computed tomography. Wilson teaches characterizing or identifying materials in voxel based on the density of each individual material (fig. 8, col. 7 lines 47-67). This addresses the added limitation of representing a material within the image data using the density of a first reference material and the density of a second reference material. Wilson however does not teach obtaining image data of the head and neck of a patient and Townsend et al. is used to address this limitation where the system and method is used to scan these regions of interest with the multi-energy CT system configured to be responsive to different x-ray spectra associated with Compton scatter and photoelectric effect (col. 16 lines 65-67, col. 17 lines 1-22). Therefore the art of record discloses the steps for obtaining data using the multi-energy computed tomography system (MECT), acquiring image data including attenuations from a Compton and photoelectric process and representing a material within the acquired image data using density of a first and second reference material. Therefore the previous rejection is maintained and repeated below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 8, 14, 18-28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (6018562) in view of Townsend et al. (6490476).

Wilson discloses an apparatus and method for obtaining data with a multi-energy computed tomography system (col. 1 lines 26-30). Wilson teaches obtaining image data including attenuations from a Compton process and to acquire image data including attenuations from a photoelectric process (col. 7 lines 24-47). The MECT is configured to be responsive to different x-ray spectra associated with Compton scatter and photoelectric effect (col. 3 lines 14-50). The method and system as taught by Wilson enables the detection and identification of concealed objects in various applications including medical areas using multiple energy computed tomography.

Wilson however does not explicitly teach obtaining image and data of the head and neck of the patient. In the same field of endeavor Townsend et al. disclose a system and method for scanning various regions of a patient including the head and neck with a CT system acquiring data including attenuations from Compton and photoelectric processes with the multi-energy CT system configured to be responsive to different x-ray spectra associated with Compton scatter and photoelectric effect (col. 16 lines 65-67, col. 17 lines 1-22). The system involves computation of the cerebral blood volume and flow of the patient (col. 3 lines 7-20, claim 1). The system scans the head and neck of the patient and classifying tissue as cancerous and non-cancerous and improved detection of abnormal growth on the bones (col. 19 line 7 lines 60-67, col. 20

lines 1-2). The system monitors a CT number change in a contrast-enhanced brain study to provide improved CT number accuracy (col. 15 lines 65-67, col. 16 lines 1-9).

The system allows detection of the location of a tracer to provide the precise location of lesions and acquire data regarding a targeting agent of a tumor (col. 19 lines 60-67, col. 20 lines 1-40). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Townsend et al. to modify the teaching by Wilson for the purpose of obtaining advanced diagnostic information related to various abnormalities including head and neck abnormalities (col. 20 lines 12-30).

3. Claims 15-17 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Townsend et al. and further in view of Carroll et al. Wilson teaches a tagging system for use in target identification but does not explicitly teach the detection of a labeled drug. In the same field of endeavor Carroll et al. disclose a CT based system and method for detecting a labeled drug (col. 11 lines 8-28). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Carroll et al. to modify the teaching by Wilson and Townsend et al. for the purpose of effectively detecting the tumor-seeking drugs.

4. Claims 7, 9-12, 25, 26, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Townsend et al. and further in view of Fessler. Wilson and Townsend et al. do not explicitly teach performing a Basis Material Decomposition (BMD) of the acquired data. In the same field of endeavor, Fessler discloses a multi-energy CT system to acquire data, perform a Basis Material Decomposition (BMD) of the acquired data, provide improved CT number accuracy, and

facilitate reduction in image artifacts (abstract, col. 3 lines 58-64, col. 4 lines 26-30, col. 7 lines 15-20 lines 66-67, col. 8 lines 1-44, col. 28 lines 13-15). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Fessler to modify the teaching by Townsend et al. for the purpose of reducing image artifacts and improving image contrast.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Townsend et al. and further in view of Leuchter et al. Wilson and Townsend et al. do not explicitly teach monitoring or diagnosing lesions related to Alzheimer's Disease. In the same field of endeavor Leuchter et al. disclose a method and apparatus of obtaining information pertaining to brain lesions and diseases such as mild dementia and Alzheimer's Disease (col. 5 lines 1-10, claims 25, 31). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Leuchter to modify the teaching by Townsend et al. for the purpose of detecting and analyzing specific neurological disorders such as Alzheimer's Disease.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baisakhi Roy whose telephone number is 571-272-7139. The examiner can normally be reached on M-F (7:30 a.m. - 4p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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